

REMARKS

The Amendments

Claim 1 is amended to incorporate the substance of claims 4 and 5 and part of the substance of claim 3. A typographical error in claim 1 is also corrected and some rephrasing of the claim for clarity made.

Applicants reserve the right to file one or more continuing and/or divisional applications directed to any subject matter disclosed in the application which has been canceled by any of the above amendments.

Rejections Under 35 U.S.C. 102

The rejection of claims 1-3 and 6 under 35 U.S.C. 102(b), as being anticipated by Nojima (U.S. Patent No. 4,686,119), is respectfully requested.

With the incorporation of the substance of claims 4 and 5 into claim 1, it is believed that the rejection under 35 U.S.C. §102 is rendered moot since it was not applied to claims 4 and 5. Thus, the rejection should be withdrawn.

Additional distinctions of the claimed invention from Nojima are set forth in the traversal of the rejection under 35 U.S.C. §103 below.

Rejections Under 35 U.S.C. 103

The rejection of claims 4-5 under 35 U.S.C. 103, as being obvious over Nojima in view of Kuroyama (U.S. Patent No. 5,755,929), is also respectfully requested.

Nojima discloses a method for cast coating paper by a rewet casting method or gel casting method. The invention is characterized by the use of a releasing agent of specific composition which allows the pressing of the paper to be conducted at high pressure and high speed without sticking to the drum or adversely affecting the paper quality. See, e.g., col. 2, lines 25-50, and the Description of the Prior Art section. Nojima discloses that the gelling of the wet coated layer in the gel casting method may be performed in the same manner as in the conventional casting method; see, e.g., col. 4, lines 43-46. Nojima discloses no other details of the gel casting method except for the specific embodiments shown in Example 5 and Comparison Example 4. In those examples, the gelling agent used is calcium formate and the process is depicted by Fig. 2.

Nojima fails to disclose a gel casting method wherein the gelling agent in the treatment solution “comprises a mixed solution of borate and boric acid having a blending ratio by weight of borate to boric acid of from 0.25/1 to 2/1.” As pointed out above, Nojima gives no specifics on the gelling agent other than its disclosure of the use of calcium formate in the Examples.

Kuroyama was cited for its teachings regarding use of a different gelling agent. Kuroyama (at col. 4, lines 34-41) provides a listing of possible coagulants (i.e., gelling agents) that could be used when needed. Kuroyama provides a listing of a number of metal salts and acids that could be used. Included in the listing are borax (i.e., borate) and boric acid. There is no specific direction to pick either borate or boric acid from among the possible choices and no examples of their use. Further, there is no indication or suggestion to use a mixture of the coagulating agents listed by Kuroyama. The reference specifically recites the use of “**a** coagulant” and provides no indication of mixtures thereof. Additionally, since it teaches nothing about mixtures, it obviously teaches nothing about a relative weight ratio between the

components of a mixture. Accordingly, like Nojima, Kuroyama provides no teaching or suggestion of a gel casting method wherein the gelling agent in the treatment solution “comprises a mixed solution of borate and boric acid having a blending ratio by weight of borate to boric acid of from 0.25/1 to 2/1.” Since neither of the references provide any teaching of the mixture or ratio of the gelling agent as recited in the instant claims, the combination of references obviously fails to render this element of the claimed invention obvious to one of ordinary skill in the art.

Even if it were obvious to modify Nojima to use a gelling agent according to the claimed invention in the Nojima method – which, as explained above, it is not – the claimed invention would still not result or be suggested thereby. Nojima and Kuroyama also fail to disclose a gel casting method wherein a “treatment solution supply roll is enclosed by the base paper such that the wet coating layer is brought into contact with the treatment solution supply roll and ponds of treatment solution are formed both before and after where the coating layer comes into contact with the treatment solution supply roll.” The latter feature of the claimed invention, i.e., of the ponds forming on both sides of the point of contact of the supply roll and coated paper, is hereinafter referred to as “double ponding.” Nojima shows, in figure 2, a gel casting method in which a coating solution is added to a roll from above. However, Nojima does not provide sufficient detail to determine whether double ponding occurs, i.e., ponds form on each side of the roll. Certainly, Nojima nowhere indicates that double ponding occurs and the burden rests upon the PTO to show that the reference meets or renders obvious each element of the claimed invention. Applicants fail to see any basis from Nojima by which it can be concluded that double ponding occurs. To the contrary, Nojima indicates that its gel casting method is, other than the

different releasing agent, a “conventional” method; see, e.g., col. 4, lines 43-46. In a conventional method, a treatment solution supply roll turns at high speed and supply treatment solution is thus brought to the forward side of the treatment solution supply roll, i.e., the side from which the paper is fed. A single pond is conventionally formed at the forward side of the roll in this case. This phenomenon, termed “single pond” method in the present application, see e.g. paragraph [0015], is what would typically occur in a conventional method where the roll is operated at high speed. In fact, Nojima makes clear that it relates to a conventional method and specifically states that its method is designed for high speed operation, see, e.g., col. 2, lines 32-33. In view of these facts, the only reasonable interpretation one of ordinary skill in the art would make of the Nojima process is that it provides the conventional single ponding result. Kuroyama also teaches nothing regarding a double ponding method. Thus, there is no disclosure or reasonable suggestion in the cited references of the double ponding method according to the claimed invention.

The significance of the distinction of double ponding from single ponding is demonstrated by the direct side-by-side comparison of Examples 1-5 in accordance with the claimed invention with Comparative Examples 1-5; see pages 12-18 of the present specification. In the comparative examples, the coating method of the claimed invention was repeated with the exception that a single pond method was used instead of a double pond method. The data (see the table of results on page 17) shows that, where a double pond method is used, very little edge dust is produced, compared to a large amount of edge dust for the coated papers of the comparative examples. Moreover, the coating properties and gloss of the paper prepared by the comparative examples were, on the whole, inferior to those properties of the paper prepared by

the claimed double pond method.

The significantly different results show the significance of the difference of the claimed method from the conventional method. Further, the significant advantages obtained by the claimed process could not have been expected from the cited prior art. The cited prior art discloses nothing regarding double ponding, let alone any advantage to be obtained thereby. The significant unexpected results, thus, also provide a clear and convincing case for nonobviousness – even assuming a prima facie case for obviousness were established. For this additional reason, the claimed invention is not rendered obvious from the cited prior art.

It is accordingly respectfully submitted that the cited prior art, considered as a whole, fails to render the claimed invention obvious to one of ordinary skill in the art. Thus, the rejection under 35 U.S.C. §103 should be withdrawn.

It is submitted that the claims are in condition for allowance. However, the Examiner is kindly invited to contact the undersigned to discuss any unresolved matters.

The Commissioner is hereby authorized to charge any fees associated with this response or credit any overpayment to Deposit Account No. 13-3402.

Respectfully submitted,

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